

Day Four Training

UAS weights

55 pounds or less, but more than .55 pounds. Under .55 pounds does not need to be registered. (Not all UAS's are quadcopters, some are fixed wing and FAA questions reference them as well.)

Preflights

Battery issues

Lithium battery and may catch fire, especially if exposed to water. Some batteries may form a bubble within the plastic membrane and should not be used anymore. Follow the manufacturer's guidelines.

Maintenance

Anything beyond the normal pre-flight, follow the manufacturer's guidelines.

Center of gravity issues

Any payload mounted on the UAS must be ensured that it does not adversely effect the center of gravity. Counter weight if an object is loaded onto one side. Overloading may lead to decreased endurance.

Bank turns and load factors

(Refer to figure 2.) Use examples. Turns always increase the weight of the aircraft. G loading.

Airport operations

Three types of airports: Civil, Military, Private

Patterns (standard traffic pattern) usually left hand and counterclockwise. TPA. Entering the pattern.

CTAF is used at non-towered airports with larger volume of traffic

UNICOM is used at smaller airports with less traffic. On a chart the "C" inside the magenta circle means the frequency is the CTAF. Magnetic heading are used on the runway.

Chart supplements US. Guide book for all airports in the US.

Waivers and registration

FAA requires a waiver at least 90 days prior to operation. All sUAS must be registered for use if it weighs more than .55 pounds and less than 55 pounds. The FAA will only approve an application for waiver only when it has been determined that the operation can be conducted safely within the terms of the waiver.

CRM / ADM and physiological issues

Began in the 70's when the FAA discovered that it was not mechanical failure causing a vast majority of accidents but rather pilot/crew error.

Involves safety, crew communication, monitoring internal and external threats, and feedback. PIC has final authority. Involves all phases of the operation.

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Physiological/Medical Factors that Affect Pilot Performance

- hyperventilation
- stress
- fatigue
- dehydration
- heatstroke
- the effects of alcohol and drugs
 - less than .04 percent BAC and that 8 hours pass between drinking alcohol and piloting an aircraft.

Scanning involves systematically focusing on different segments of the sky for short intervals.

Hazardous attitudes

The Five Hazardous Attitudes and their Antidotes

Aerodynamics

Stalls and load factors

Critical angle of attack

Emergencies

When a remote pilot does experience an inflight emergency, the pilot may take any action to ensure that there is not a hazard to other people or property. For example, if during a flight the small UA experiences as battery fire, the remote pilot may need to climb the small UA above 400' AGL to maneuver to a safe landing area. In this instance, a report will need to be made only if asked to do so by the FAA.

Accident reporting and injuries

Human factor is the one common factor which affects most preventable accidents.

An accident is an injury requiring a hospitalization over 48 hours.

The accident must be reported to the FAA within 10 days.

Practical Exercises (Flight training curriculum)

Completion of advanced flight maneuvers. Use of FLIR camera.